

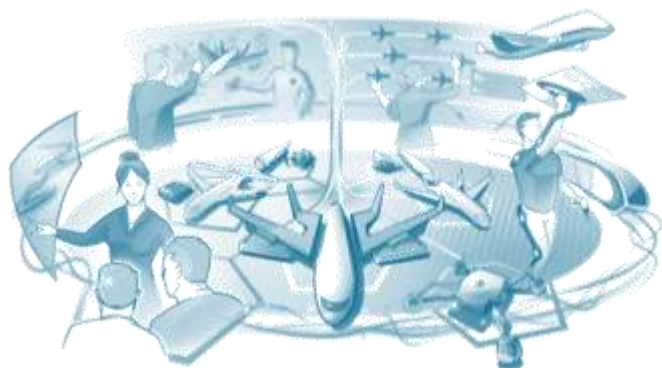
R&T

DIGITAL TWIN CONCEPT AND ARCHITECTURE IMPLEMENTATION

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Information Management Architect

SUMMARY



Digital twin concept

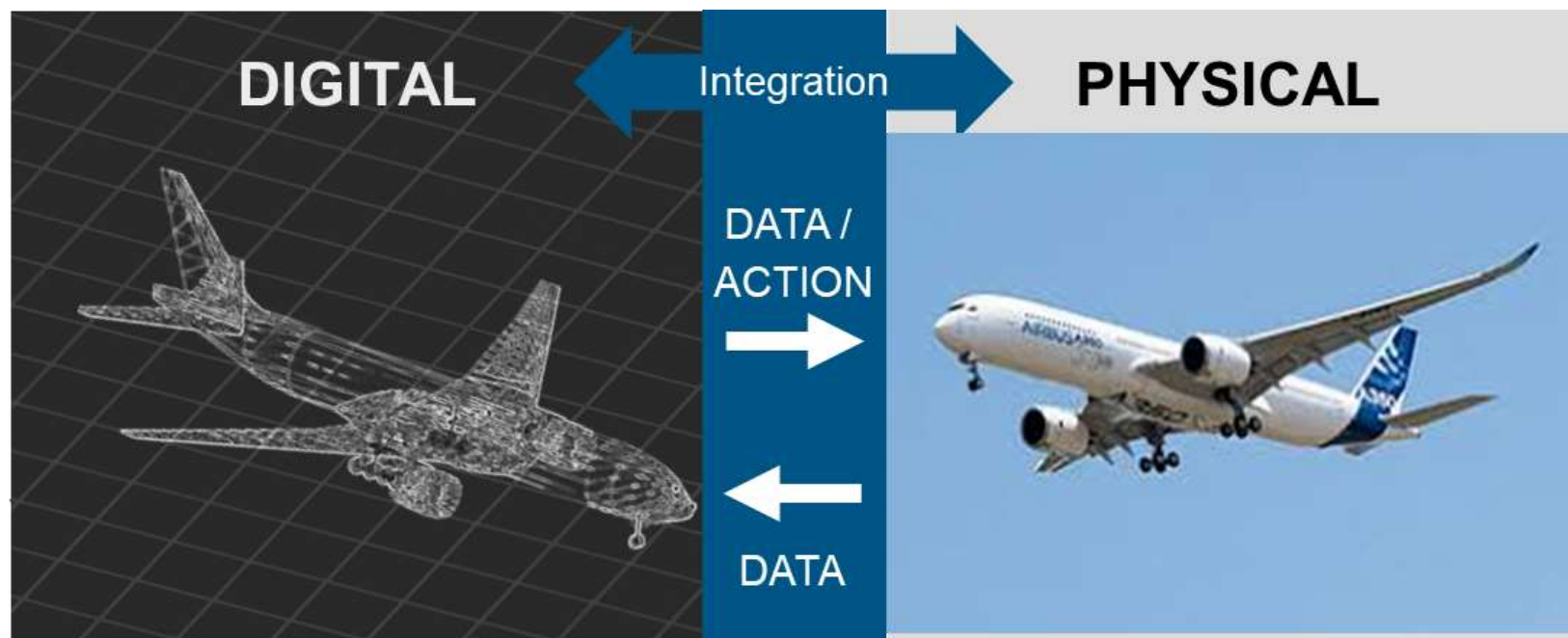
IOT as an enabler

Information Management architecture elements

Conclusion and future

- ◇ What does it mean?
 - **Digital Twin** is a simple concept
 - The entity digitally represented can be the **product** or the **factory**, but it can also be a **process** or a **service**

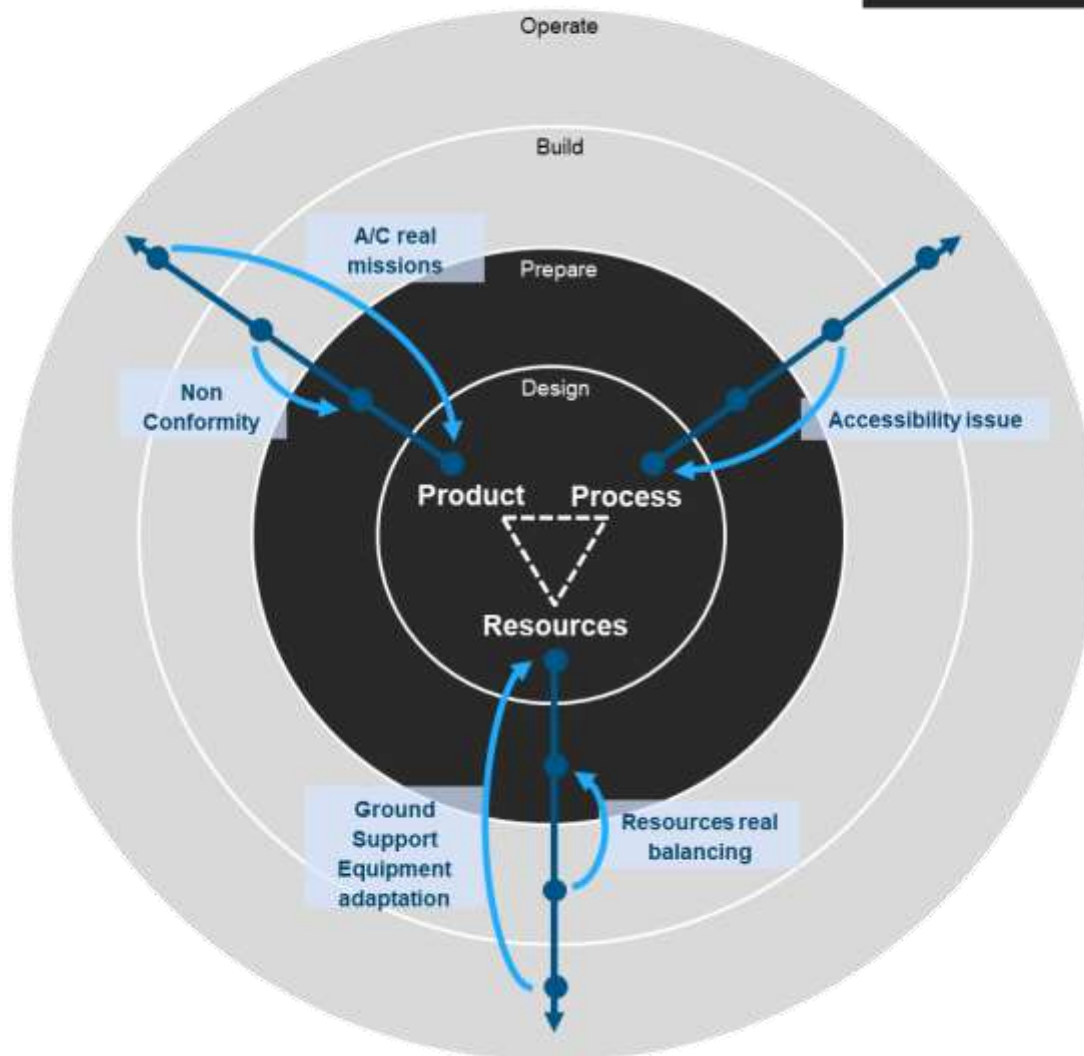
DIGITAL TWIN CONCEPT



A digital twin is a **digital representation of a real-world** entity or system. (Gartner 2019)

DIGITAL TWIN CONCEPT

PHYSICAL WORLD
DIGITAL WORLD



What is the
ambition
today?

DIGITAL TWIN CONCEPT

◇ PLM Tools as first applying Digital Twin concept

- PLM tools proposed since a long time to modelise product and process
 - ◇ In concept and definition phase with PLM centric approach
 - ◇ Diverging from the CAD representation
 - ◇ With multidisciplinary views

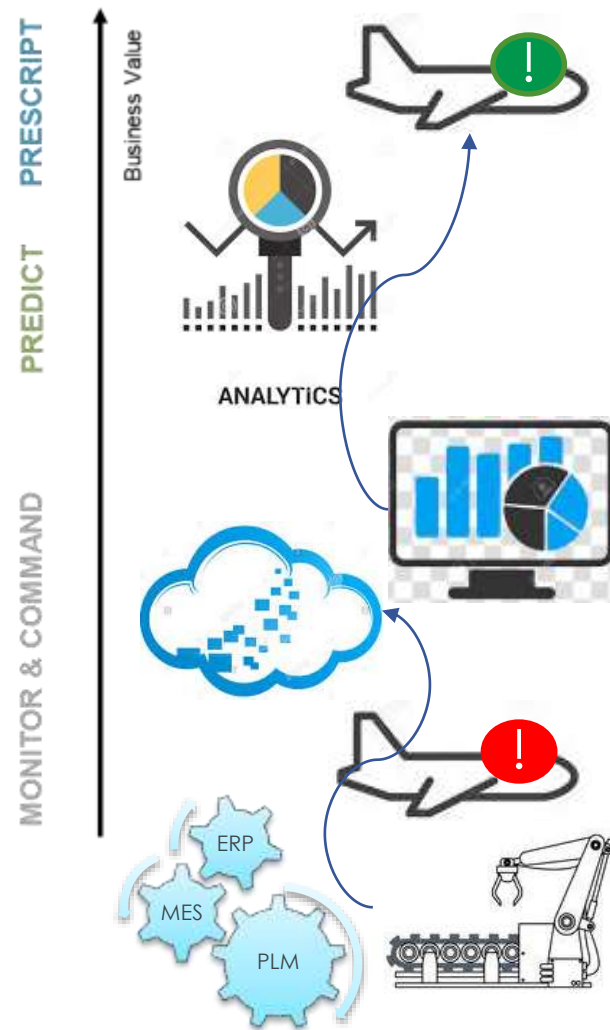
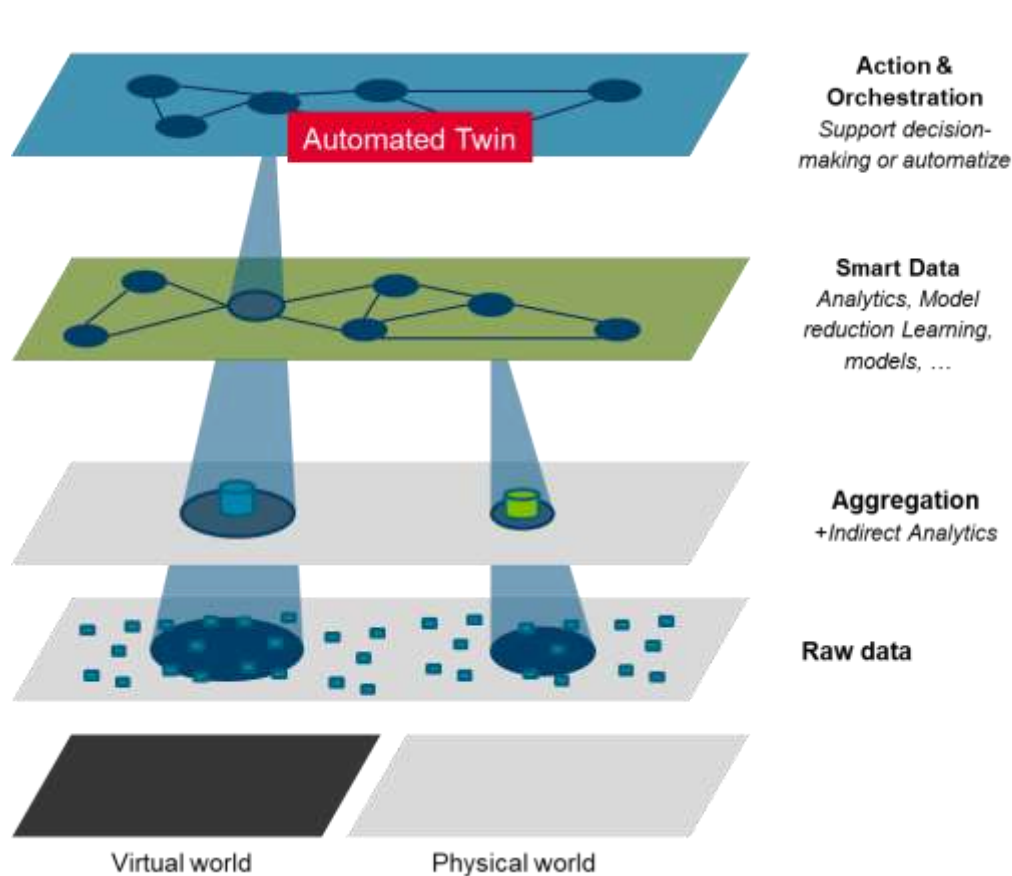


- Coupling PLM (design and definition model) and ERP (prepared and built model) data allows digital twin
 - ◇ Following change process in real time
 - ◇ Following delta comparison between the theoretical definition view and the as built view of the product

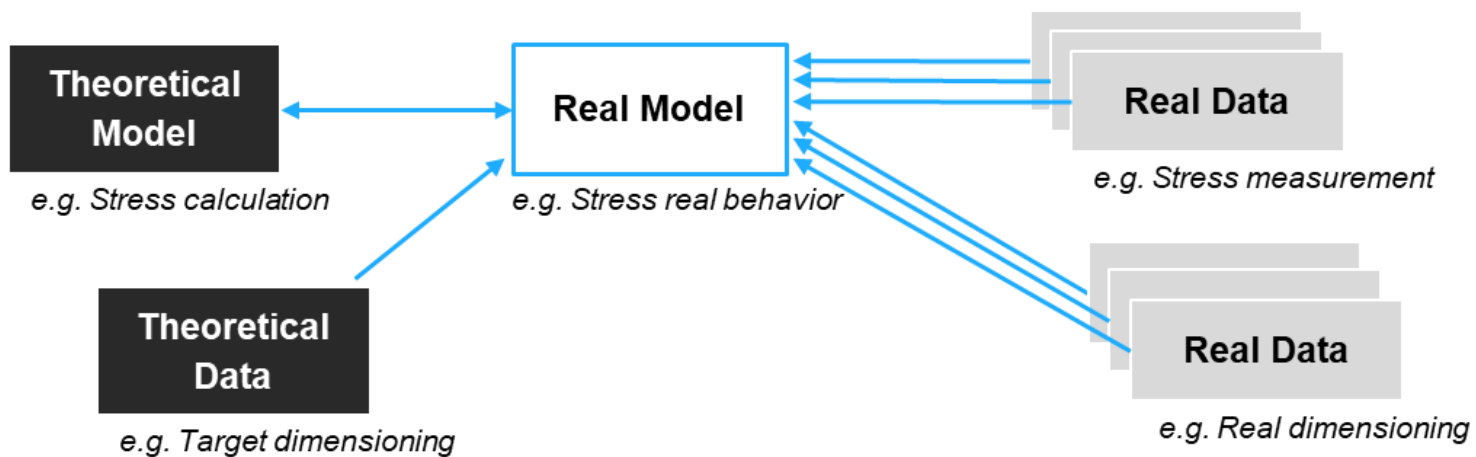
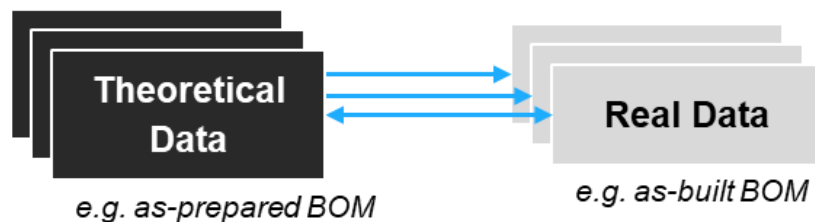
DIFFERENT LEVELS OF DIGITAL TWIN



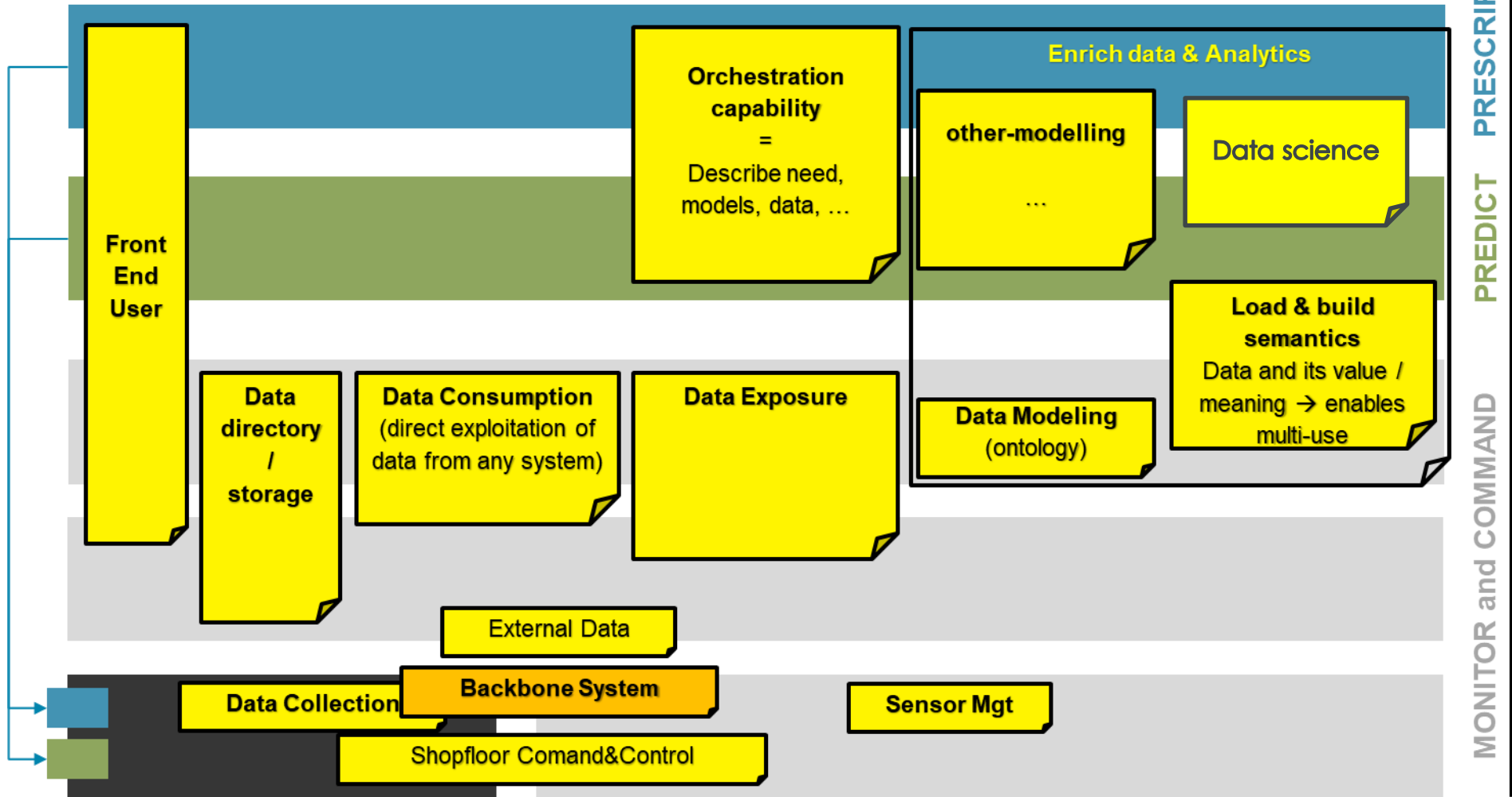
#LIVEWORX



“DIRECT” OR
“INDIRECT”
TWINNS TO
ALLOW ALL THE
LEVELS

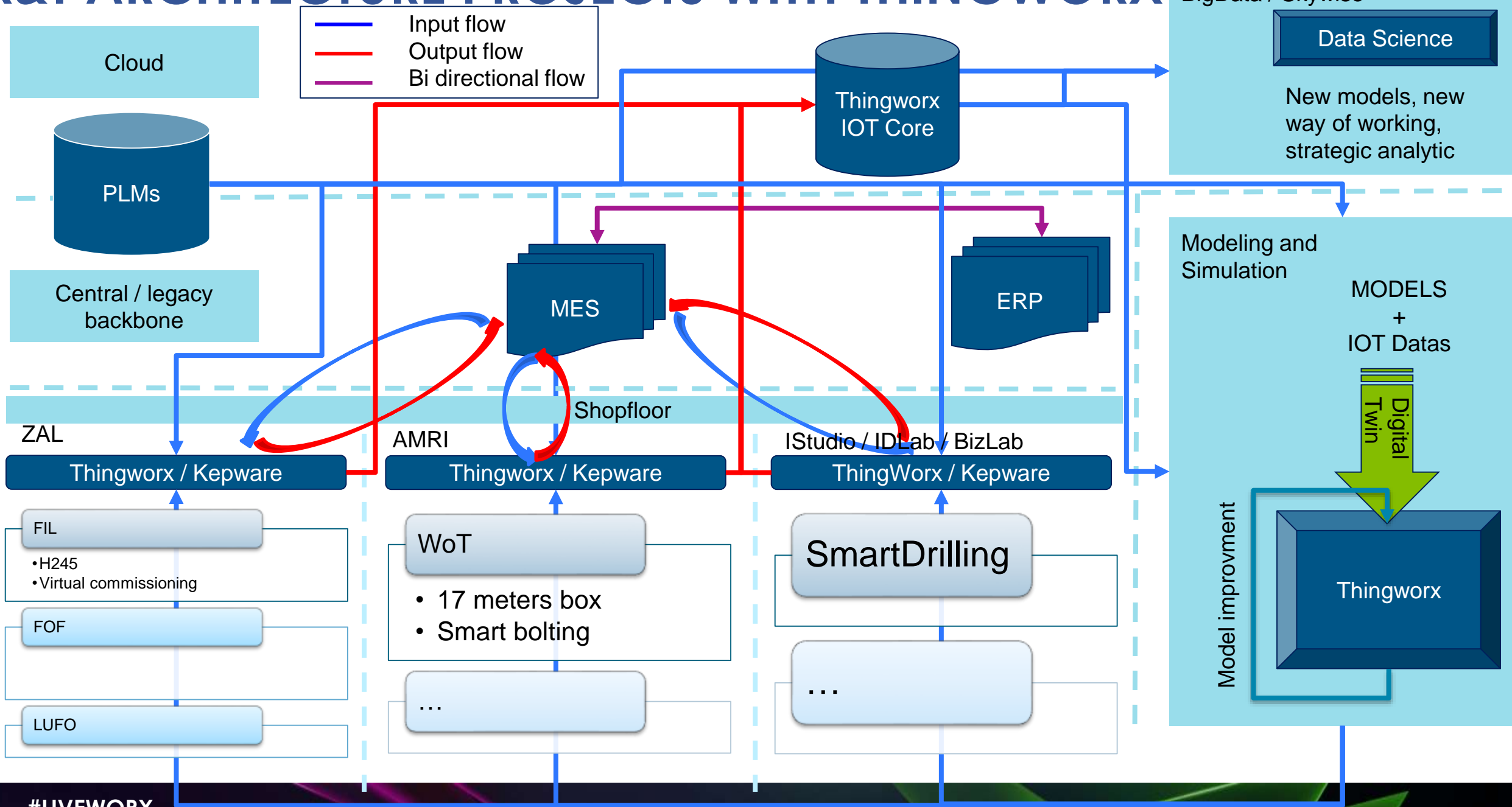


INFORMATION MANAGEMENT ARCHITECTURE ELEMENTS



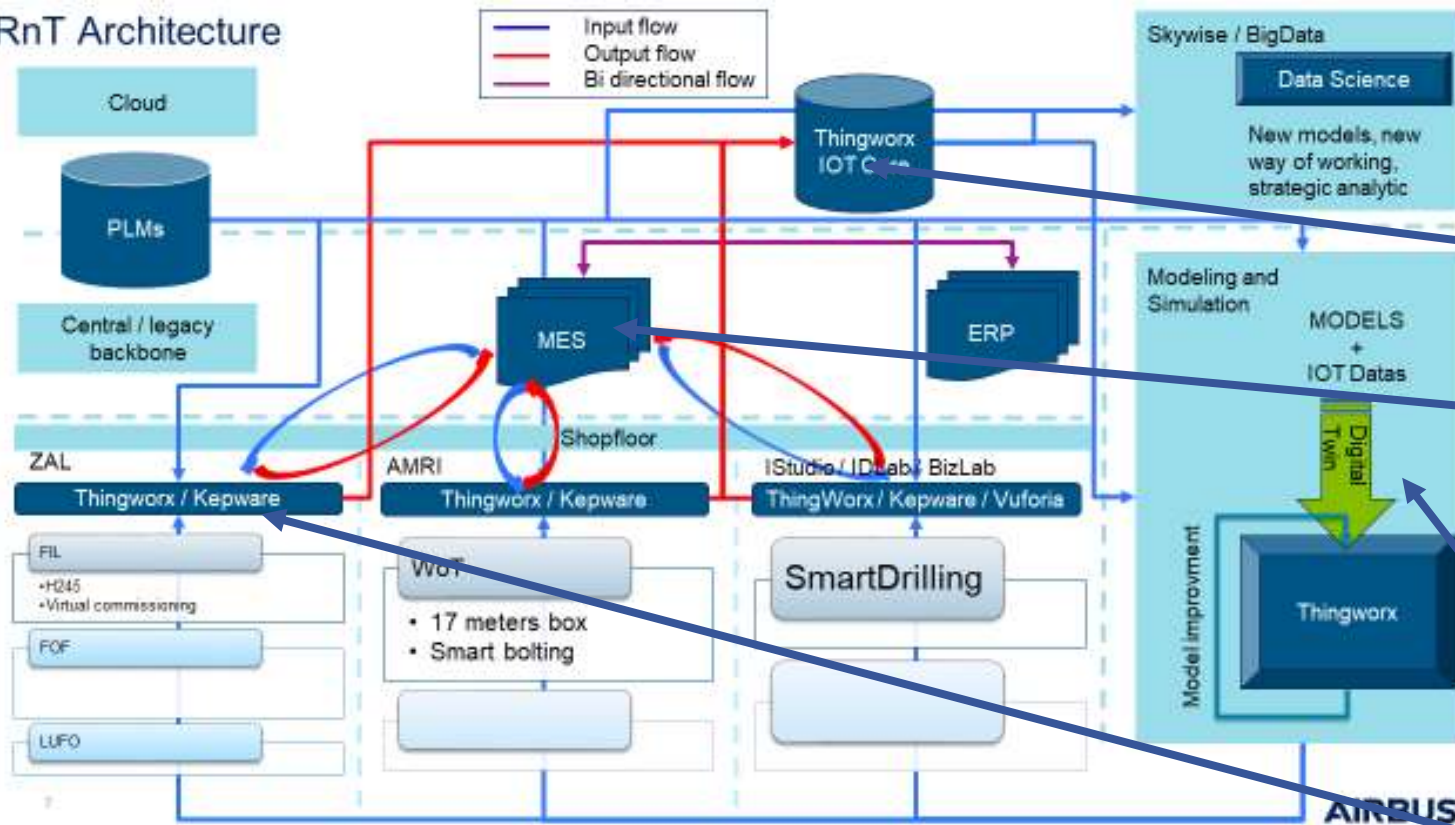
Functional bricks of a global enterprise architecture to support digital twin

R&T ARCHITECTURE PROJECTS WITH THINGWORX



R&T ARCHITECTURE PROJECTS WITH THINGWORX

RnT Architecture



- ◇ Thingworx interoperability
- ◇ Thingworx IOT Core
- ◇ Thingworx link with backbones (PLM and ERP)
- ◇ Thingworx orchestration capabilities
- ◇ Kepware connectivity

CONCLUSION AND FUTURE

- ◇ What to remember ?
 - Model Based approach
 - System interoperability
 - Orchestrator

- ◇ My vision of digital twin support for a manufacturer company
 - Predictive models to make strategic decision
 - Impact control of random events
 - Efficient support of customers, controlling our product

THANKS A LOT!

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